UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,333	03/25/2004	Alan J. Heeger	327823-1052	8242

38706 7590 08/21/2006

FOLEY & LARDNER LLP
1530 PAGE MILL ROAD
PALO ALTO, CA 94304

EXAMINER	
CROW, ROBERT THOMAS	
ART UNIT	**PAPER NUMBER**
1634	

DATE MAILED: 08/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/810,333	HEEGER ET AL.	
	Examiner	Art Unit	
	Robert T. Crow	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-8,12-16,25,28-40,47,48,51-56 and 59-62* is/are pending in the application.

4a) Of the above claim(s) *39,40,47,48,51-56 and 59-62* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-8,12-16,25 and 28-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 March 2004* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10810333*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I in the reply filed on 1 June 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Claims 39-40, 47-48, 51-56, and 59-62 have been withdrawn. Claims 26-27 were previously cancelled. Claims 1, 4-8, 12-16, 25, and 28-38 are currently under prosecution.

Claim Objections

Claims 1 and 25 are objected to because of the following informalities:

A. Claim 1 recites "anologinucleotide" in line 1 of the claim. This appears to be a typographical error.

B. Claim 25 recites "a oligonucleotide" in line 1 of the claim. This appears to be a typographical error.

C. Appropriate correction is required.

Information Disclosure Statement

The Information Disclosure Statements filed 18 November 2004, 10 April 2006, and 24 July 2006 are acknowledged. However, only the Abstracts of documents CN1422960 (China) and CN1422961 (China) are being considered because English language translations of the remainder of the documents have not been provided. See MPEP 609.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4-8, 12-16, 35-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Blackburn et al (U.S. Patent No. 6,264,825 B1, issued 24 July 2001).

Regarding claim 1, Blackburn et al teach a detector for determining the presence of an oligonucleotide target having a target oligonucleotide sequence (e.g., an electronic device for detection of analytes [column 86, lines 56-58], wherein the analyte is a nucleic acid; column 6, lines 30-33) comprising:

an electrode capable of sensing redox events in a redox moiety (e.g., a detection electrode for detecting electron transfer; column 2, lines 14-24) and

an oligonucleotide probe immobilized on the electrode (e.g., a probe comprising a capture binding ligand is immobilized on the detection electrode [column 13, lines 10-13], wherein the capture binding ligand is a nucleic acid; column 32, lines 21-25),

with at least one of the target and the probe comprising a redox moiety (e.g., the target is labeled with an ETM [column 62, lines 55-56]; wherein an ETM is an electron transfer moiety [i.e., redox moiety]; Abstract), the probe having a probe nucleotide sequence which hybridizes to the target sequence (e.g., Figure 3A; column 3, lines 45-55) and

in the absence of hybridization between the target and the probe, at least one redox moiety being located in a first position relative to the electrode and, in the presence of hybridization between the target and the probe, said at least one redox moiety being located in a second position relative to the electrode, (e.g., the target is labeled with an ETM [column 62, lines 55-56] and the probe is immobilized on the detection electrode [column 13, lines 10-13 and column 32, lines 21-25] and the target hybridizes to the probe [Figure 3A and column 3, lines 45-55]; therefore, if the target is not hybridized to the probe, the ETM on the target is farther away from the electrode [i.e., in a first position] and when the target is hybridized to the probe, the ETM on the target is closer to the electrode [i.e., in a second position]),

said first and second positions giving rise to distinguishable redox events detectable by the electrode (e.g., detection proceeds through the use of the ETM; Abstract) wherein the second position is

closer to the electrode than the first position (e.g., hybridization of the target to the probe [Figure 3A and column 3, lines 45-55] brings the ETM on the target closer to the electrode as described above).

Regarding claims 4 and 6, Blackburn et al teach the detector of claim 1, where the target comprises a redox moiety (e.g., the target is labeled with an ETM [column 62, lines 55-56]; wherein an ETM is an electron transfer moiety [i.e., redox moiety]; Abstract).

Regarding claim 5, Blackburn et al teach an alternate embodiment of the detector of claim 1 for determining the presence of an oligonucleotide target having a target oligonucleotide sequence (e.g., an electronic device for detection of analytes [column 86, lines 56-58], wherein the analyte is a nucleic acid; element 120 of Figure 5C; column 6, lines 30-33) comprising:

an electrode capable of sensing redox events in a redox moiety (e.g., a detection electrode for detecting electron transfer; element 105 of Figure 5C; column 2, lines 14-24) and

an oligonucleotide probe immobilized on the electrode (e.g., Figure 5C, wherein the probe comprises elements 145, 141, 145, and 135*, and wherein the probe is immobilized to the electrode when hybridized to the target, which is immobilized to the electrode through elements 110, 111, 112, 100, and 106 of Figure 5C; column 4, lines 60-65);

with the probe comprising a redox moiety (e.g., the probe is labeled with an ETM [e.g., 135* of Figure 5C]; wherein an ETM is an electron transfer moiety [i.e., redox moiety]; Abstract), the probe having a probe nucleotide sequence which hybridizes to the target sequence (e.g., Figure 5C and column 4, lines 60-65) and

in the absence of hybridization between the target and the probe, at least one redox moiety being located in a first position relative to the electrode and, in the presence of hybridization between the target and the probe, said at least one redox moiety being located in a second position relative to the electrode, (e.g., the probe elements 145, 141, 145, and 135* of Figure 5C are distant from the electrode in the absence of the target [i.e., in the first position] because there is no hybridization, and when the probe elements are hybridized as shown in Figure 5C, the redox moiety [i.e., ETM 135*] is closer to the electrode; therefore, if

the target is not hybridized to the probe, the ETM on the probe is farther away from the electrode [i.e., in a first position] and when the target is hybridized to the probe, the ETM on the probe is closer to the electrode [i.e., in a second position),

said first and second positions giving rise to distinguishable redox events detectable by the electrode (e.g., detection proceeds through the use of the ETM; Abstract) wherein the second position is closer to the electrode than the first position (e.g., hybridization of the target to the probe [Figure 5C and column 4, lines 60-65] brings the ETM on the probe closer to the electrode as described above).

The alternate embodiment of claim 1 as described above meets the limitations of claim 5, wherein the probe comprises a redox moiety (e.g., the probe comprises elements 145, 141, 145, and 135* of Figure 5C, wherein 135* is the ETM [i.e., the redox moiety]; column 4, lines 60-65).

Regarding claim 7, the Blackburn et al teach the detector of claim 5, wherein the probe is immobilized on the electrode at a position distant form the redox moiety (e.g., Figure 5C, wherein the ETM [i.e., the redox moiety] is at the end of probe element 142, and the immobilization point of the probe is the hybridized element 141; column 4, lines 60-65).

Regarding claim 8, Blackburn et al teach the detector of claim 1, wherein the electrode is capable of inducing redox events in the redox moiety (e.g., an amperometric device for applying a potential to the electrode and different currents result because of electron transfer; column 82, lines 7-20).

Regarding claim 12, Blackburn et al teach the detector of claim 1, wherein the second configuration comprises internal hybridization between two regions of the probe (e.g., Figure 3B, wherein the probe comprises capture extended probe 110 having first portion 111 that hybridizes to target 120, and the probe also comprises the second portion 112 and the capture probe 100; wherein second portion 112 and capture probe 100 are hybridized to each other [column 3, lines 56-61]; therefore, there is internal hybridization between two regions [i.e., 112 and 100] of the probe).

Regarding claim 13, Blackburn et al teach the detector of claim 1, wherein the second configuration comprises a loop comprising a region of the target and a region of the probe (e.g., Figure

3C, wherein the probe comprises numbers 102,101, 100, 130, 131, 132, 110, 111, and 112; the target is number 120, and the loop is formed between target 120 and probe regions 132 and 110; column 3, line 60-column 4, line 5).

Regarding claims 14 and 15, Blackburn et al teach the detector of claim 1 herein the electrode comprises a metal (e.g., gold; column 2, lines 60-65).

Regarding claim 16, Blackburn et al teach the detector of claim 1, wherein the redox moiety is ferrocene (column 14, lines 8-12).

Regarding claim 35, Blackburn et al teach a detector for determining the presence of an oligonucleotide target having a target nucleotide sequence (e.g., an electronic device for detection of analytes [column 86, lines 56-58], wherein the analyte is a nucleic acid; column 6, lines 30-33) comprising:

an electrode capable of sensing redox events in a redox moiety (e.g., a detection electrode for detecting electron transfer; column 2, lines 14-24) and

an oligonucleotide probe immobilized on the electrode (e.g., a probe comprising a capture binding ligand is immobilized on the detection electrode [column 13, lines 10-13], wherein the capture binding ligand is a nucleic acid; column 32, lines 21-25),

the target comprising a redox moiety (e.g., the target is labeled with an ETM [column 62, lines 55-56]; wherein an ETM is an electron transfer moiety [i.e., redox moiety]; Abstract), the probe having a probe nucleotide sequence which hybridizes to the target sequence (e.g., Figure 3A; column 3, lines 45-55) and

in the absence of hybridization between the target and the probe, the redox moiety being located in a first position relative to the electrode and, in the presence of hybridization between the target and the probe, the redox moiety being located in a second position relative to the electrode, (e.g., the target is labeled with an ETM [column 62, lines 55-56] and the probe is immobilized on the detection electrode [column 13, lines 10-13 and column 32, lines 21-25] and the target hybridizes to the probe [Figure 3A and column 3, lines 45-55]; therefore, if the target is not hybridized to the probe, the ETM on the target is in a

first position and when the target is hybridized to the probe, the ETM on the target is in a second position),

said first and second positions giving rise to distinguishable redox events detectable by the electrode (e.g., detection proceeds through the use of the ETM; Abstract).

Regarding claim 36, Blackburn et al teach the detector of claim 35, wherein the first position is closer to the electrode that the second position (e.g., a solution comprising the target is added to the detector [column 92, lines 35-40] and is labeled with an ETM [column 62, lines 55-56]; wherein an ETM is an electron transfer moiety [i.e., redox moiety; Abstract]; and detection proceeds through the use of the ETM; Abstract).

It is noted that *In re Best* (195 USPQ 430) and *In re Fitzgerald* (205 USPQ 594) discuss the support of rejections wherein the prior art discloses subject matter which there is reason to believe inherently includes functions that are newly cited or is identical to a product instantly claimed. In such a situation the burden is shifted to the applicants to "prove that subject matter shown to be in the prior art does not posses characteristic relied on" (205 USPQ 594, second column, first full paragraph). Blackburn et al teach that hybridization takes place over the course of 12 hours (column 92, lines 35-41), followed by activation of the circuitry for detection (column 92, lines 40-55). During the hybridization step, the target is free in solution; therefore, during the hybridization step, there is a first position wherein the redox moiety on the target is closer to the electrode; i.e., as a consequence of being free in solution, the target diffuses to all possible positions within the detector, including a first position which palaces the redox moiety closer to the electrode than when the target is hybridized to the probe (i.e., the second position).

Blackburn et al also teach that the positions are distinguishable (i.e., electron transfer through a single-stranded nucleic acid [i.e., the unhybridized target] is slower than through a double stranded nucleic acid [i.e., a target hybridized to the probe] and is detectable; column 23, lines 40-52).

Therefore, Blackburn et al teach all of the limitations of claim 36, and the claim is therefore anticipated by Blackburn et al.

Regarding claim 37, Blackburn et al teach the detector of claim 35, wherein the second position is closer to the electrode than the first position (e.g., hybridization of the target to the probe [Figure 3A and column 3, lines 45-55] brings the ETM on the target closer to the electrode).

Regarding claim 38, Blackburn et al teach the detector of claim 35, wherein the electrode is capable of inducing redox events in the redox moiety (e.g., a potential is applied to the electrode and different currents result because of electron transfer; column 82, lines 7-16).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 25 and 28-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blackburn et al (U.S. Patent No. 6,264,825 B1, issued 24 July 2001) in view of Lizardi et al (U.S. Patent No. 5,312,728, issued 17 May 1994).

Regarding claim 25, Blackburn et al teach a detector for determining the presence of an oligonucleotide target having a target oligonucleotide sequence (e.g., an electronic device for detection of analytes [column 86, lines 56-58], wherein the analyte is a nucleic acid; column 6, lines 30-33) comprising:

an electrode capable of sensing redox events in a redox moiety (e.g., a detection electrode for detecting electron transfer; column 2, lines 14-24) and

an oligonucleotide probe having a first region, a second region, and a third region (e.g., Figure 5F, wherein the first region is first label extender probe 160, the second region is amplifier probe 150, and the third region is label probe 145; column 4, lines 66-column 5, line 13),

the first region being immobilized on the electrode (e.g., label extender probe 160 is immobilized on the electrode when the target is present; Figure 5F and column 4, lines 66-column 5, line 13),

the third region being bound to a redox moiety (e.g., label probe is labeled with ETM 135* [Figure 5F and column 4, lines 66-column 5, line 13]; wherein an ETM is an electron transfer moiety [i.e., redox moiety] Abstract);

the second region being present in the probe intermediate the first and third regions (e.g., the second region is amplifier probe 150; Figure 5F and column 4, lines 66-column 5, line 13); and

the redox moiety being located in a first position relative to the electrode in the absence of hybridization to the target, and, in the presence of hybridization between the target and the probe, said at least one redox moiety being located in a second position relative to the electrode, (e.g., the probe of Figure 5F is distal to the electrode in the absence of the target [i.e., in the first position], and when the probe elements are hybridized as shown in Figure 5F, the redox moiety [i.e., ETM 135*] is closer to the electrode; therefore, if the target is not hybridized to the probe, the ETM on the probe is farther away from the electrode [i.e., in a first position] and when the target is hybridized to the probe, the ETM on the probe is closer to the electrode [i.e., in a second position]),

said first and second positions giving rise to distinguishable redox events detectable by the electrode (e.g., detection proceeds through the use of the ETM; Abstract) wherein the second position is

closer to the electrode than the first position (e.g., hybridization of the target to the probe [Figure 5F and column 4, lines 66-column 5, line 13] brings the ETM on the probe closer to the electrode as described above).

Blackburn et al do not teach the probe is a single molecule wherein first and second loops in the second region that are disrupted by hybridization to the target.

However, Lizardi et al teach a probe nucleic acid that is a single molecule (e.g., column 14, Example V and Figure 12) having a first nucleotide sequence complementary to and spaced apart form a second nucleotide sequence with which it self hybridizes to form a first loop (e.g., elements 31-33 of Figure 12, including switch sequences 32 and 33; Example V), wherein upon binding to a target (element 8 of Figure 13), the first sequence binds to the target and the first loop is disrupted (i.e., loop 31 binds to the target [Figure 13], wherein switch sequences and probe sequences overlap; column 7, lines 47-55) and permitting complementary regions to self hybridize to form a second loop (e.g., ribozyme structure 36 of Figure 13) that is detectable (column 14, 34-41) with the added advantage that the assay is quantitative and allows exponential amplification (column 6, lines 1-5).

It would therefore have been obvious to a person or ordinary skill in the art at the time the invention was claimed to have modified the detector comprising probes as taught by Blackburn et al with the loop forming probe as taught by Lizardi et al with a reasonable expectation of success. The ordinary artisan would have been motivated to make such a modification because said modification would have resulted in a quantitative assay that allows exponential amplification as explicitly taught by Lizardi et al (column 6, lines 1-5).

Regarding claim 28, the detector of claim 25 is discussed above. Blackburn et al also teach the detector for detecting electron transduction between the electrode and the redox moiety (e.g., a sensor for diction of electron transfer between the ETM and the electrode; column 82, lines 26-38). Lizardi teaches detection when the second loop is formed (column 14, lines 34-41).

Regarding claim 29, the detector of claim 28 is discussed above. Blackburn et al also teach an indicator for inducing electron transduction (e.g., an amperometric device for applying a potential to the electrode and different currents result because of electron transfer; column 82, lines 7-20).

Regarding claim 30, the detector of claim 29 is discussed above. Blackburn et al also teach the first region is at one end of the probe (e.g., Figure 5F, wherein the first region is first label extender probe 160; column 4, lines 66-column 5, line 13).

Regarding claim 31, the detector of claim 29 is discussed above. Blackburn et al also teach the third region is at the second end of the probe (e.g., Figure 5F, wherein the third region is label probe 145; column 4, lines 66-column 5, line 13),.

Regarding claims 32 and 33, the detector of claim 25 is discussed above. Blackburn et al also teach the electrode comprises a metal (e.g., gold; column 2, lines 60-65).

Regarding claim 34, the detector of claim 33 is discussed above. Blackburn et al also teach wherein the redox moiety is ferrocene (column 14, lines 8-12).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claims 1, 4-8, 12-16, 25, and 28-35 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14 of copending Application No. 11/193,318. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-14 of the '318 application describe all of the limitations of the claims of the instant application; e.g., electrodes capable of sensing redox moieties, oligonucleotide probes (i.e., aptamers oligonucleotide probes) immobilized on electrodes, first and second positions, internal hybridization, gold electrodes, redox labels, and first, second, and third regions. For example, instant claim 14 is drawn to a detector comprising and electrode capable of sensing redox events in a redox moiety, and oligonucleotide probe immobilized on the electrode, the probe having a redox moiety, first and second positions of said redox moiety in the presence and absence of hybridization of the probe to a target, wherein the second position is closer to the electrode than the first position, and a gold electrode. These limitations are met by claims 1, 3, 8, and 9 of the '318 application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

2. Claims 1, 4-5, 7-8, 12-16, 25, 28-38 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3-6, 8-11, 13-17, 20-52 of copending Application No. 10/678,760. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1, 3-6, 8-11, 13-17, 20-52 of the '760 application describe all of the limitations of the claims of the instant application,; e.g., target polynucleotides, electrodes capable of sensing redox moieties, oligonucleotide probes (i.e., polynucleotide probes) immobilized on electrodes, first and second positions, internal hybridization, gold electrodes, redox labels, and first, second, and third regions. For example, instant claim 14 is drawn to a detector comprising and electrode capable of sensing redox events in a redox moiety, and oligonucleotide probe immobilized on the electrode, the probe having a redox moiety, first and second positions of said redox

moiety in the presence and absence of hybridization of the probe to a target, wherein the second position is closer to the electrode than the first position, and a gold electrode. These limitations are met by claims 1, 3, 33, and 34 of the '760 application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Interpretation

This Office Action has set forth a rejection of claim 36 under 35 USC 102(b). While claim 36 has been given the broadest reasonable interpretation consistent with the specification (*In re Hyatt*, 211 F.3d1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000); (see MPEP 2111 [R-1]), Applicant is invited to explain a different embodiment of claim 36 which further illustrates the embodiment wherein the target comprising the redox moiety is **closer** to the electrode in the **absence** of hybridization. If applicant provides a further discussion of claim 36, applicant is requested to point to support in the specification for the discussion.

Conclusion

1. No claim is allowed.

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert T. Crow whose telephone number is (571) 272-1113. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on (571) 272-0735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Robert T. Crow
Examiner
Art Unit 1634

JULIET C. SWITZER
PRIMARY EXAMINER